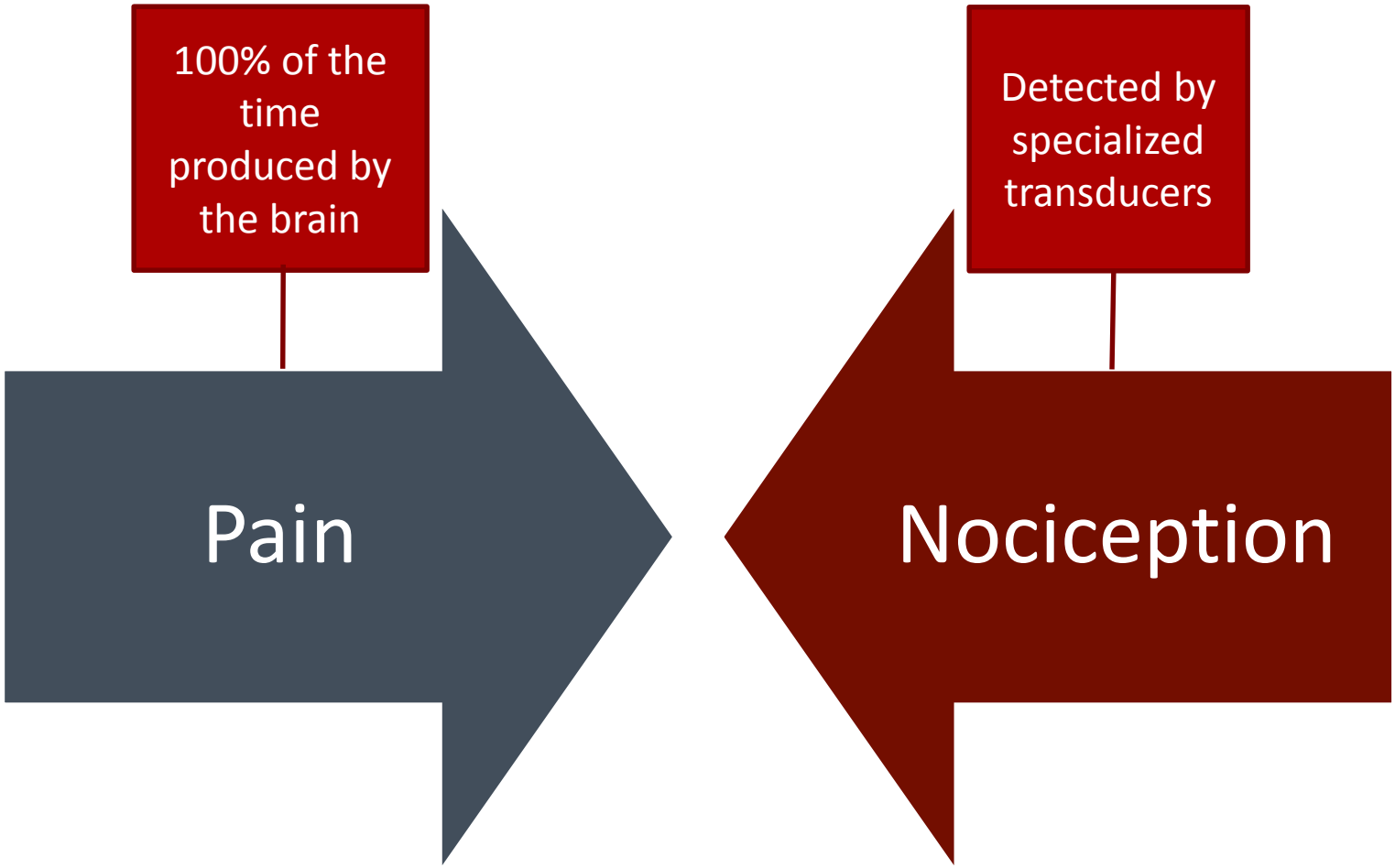
THE ROLE OF PHYSICAL THERAPY IN THE MANAGEMENT OF CHRONIC PAIN

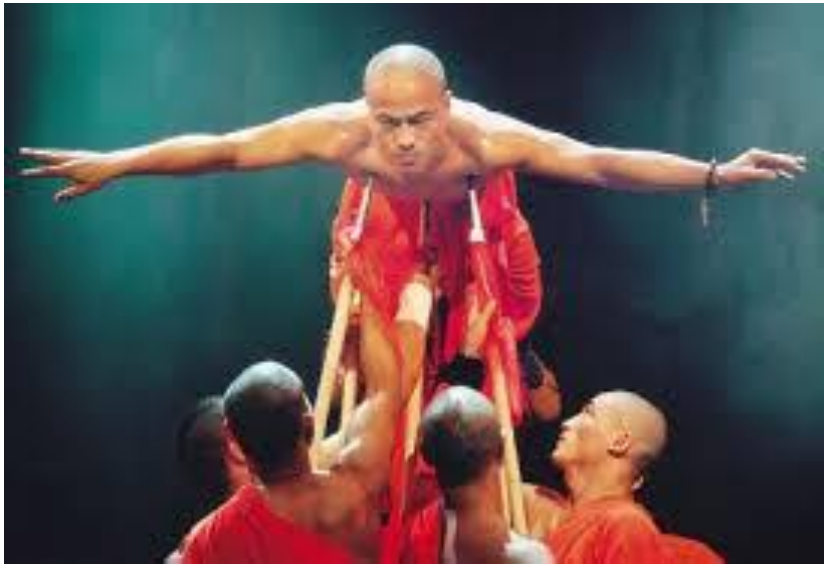
Guillermo Cutrone, PT, DSc
Doctor of Science - Orthopedic Physical Therapy
Orthopedic Physical Therapy Specialist
Fellow American Academy of Orthopedic Manual Physical Therapists
Assistant Professor / Director of Student Affairs
South College Tennessee

Goals

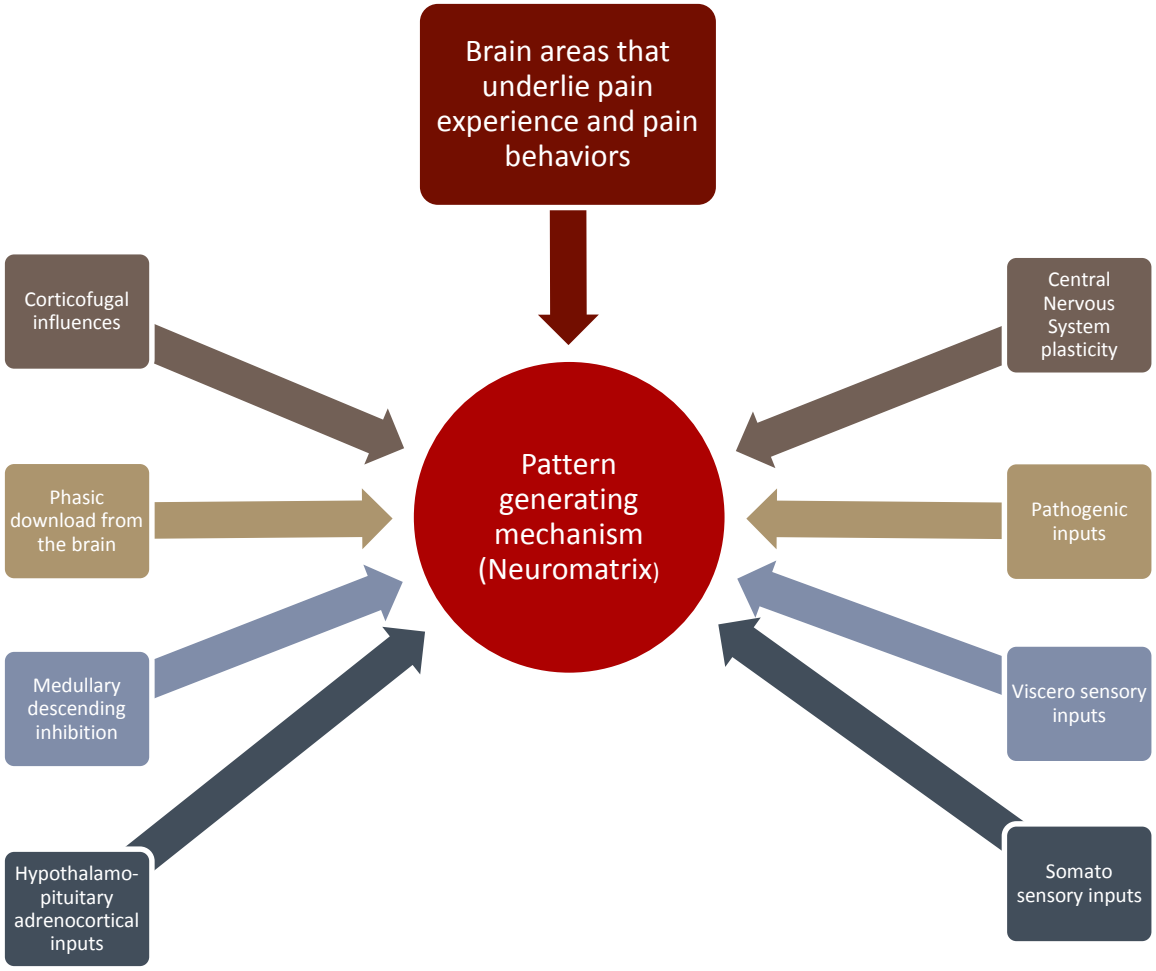
- At the end of this presentation participants should be able to:
  - Recognize health care professionals responsibility in current trends of dangerous pain management strategies, which have led to poor clinical outcomes
    - Unnecessary imaging and surgical procedures
    - Poor communication using patho-anatomical references
      - Depression
      - Workday loss
      - Addictive legal and illegal drug use trends (i.e. Opiods – Heroin)
      - Death
  - Have a deeper understanding of how Physical Therapists work with patients with chronic pain of musculoskeletal origin

What is pain and where is it produced?



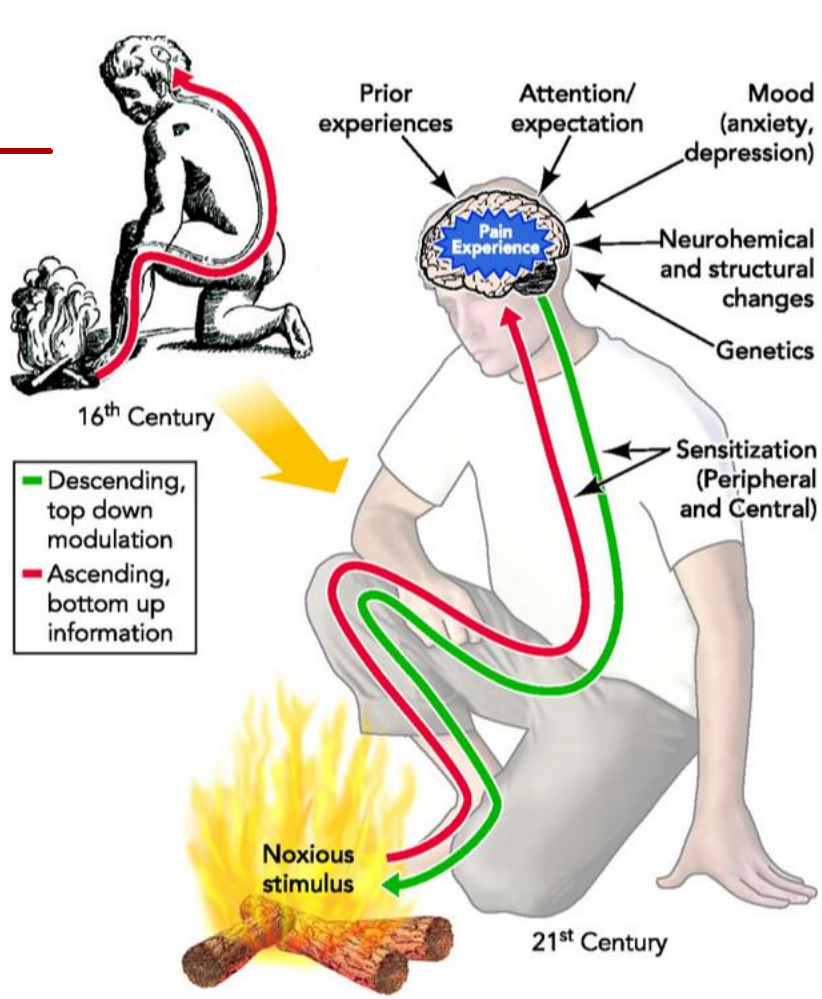


Pain is more complex



Pain perception: Ancient and current concepts

Classical Cartesian View



Bingel et al. (2008)

Are we using the right approach to manage pain?

"FIRST, LET ME GIVE YOU SOMETHING FOR THE PAIN"

Recommended

COMMENTARY

Words That Harm, Words That Heal

A PHYSICIAN ENTERS A patient's hospital room and says: "Good morning. Well, tell me, how is your chest pain? I just reviewed the pictures from your catheterization. You have a severe blockage, and you may be living with a time bomb in your chest." The patient sits motionless, waiting for her physician's recommendation.

Conversations akin to this one between physician and patient may seem contrived but are not uncommon. Being ill inherently humbles and corrodes the sense of self, making patients vulnerable to the words of their physicians.[1-3] Language re-

course of their own health care and mobilize the inner resources that are required for healing.

Language is not neutral, however.[8] As Spender[11] said in *Man-Made Language*, language is "not merely a vehicle which carries ideas. It is itself, a shaper of ideas," influencing the nature and quality of interpersonal experiences. Yet language is often misused. Medicine, like other professions, remains bogged down by technical jargon and metaphors that create fear and become what de Saint-Exupery[12] calls "the source of misunderstandings." These are words that harm. In response, some professions, such as the law, have introduced a quiet linguistic

just had a heart attack: the first few hours of uncertainty in the coronary care unit are also an introduction to mortality, eliciting worry that every beep on the heart monitor might be the last. Then, at the height of the patient's anxiety, the physician might come in and gravely announce, "You have the type of lesion we call a widow maker." Other patients may be told that "the next heartbeat may be your last" or that "you are living on borrowed time." Subsequently, these patients are informed that they must proceed with cardiac surgery to see if the "dangerous anatomy" can be corrected.

When physicians reach for metaphorical expressions to ex-

Bedell (2004)

American Pain Society Guidelines on the diagnosis and management of low back pain

- Clinicians should not routinely obtain imaging or other diagnostic tests in patients with nonspecific low back pain
- Clinicians should perform diagnostic imaging and testing for patients with LBP when severe or progressive neurologic deficits are present or when serious underlying conditions are suspected on the basis of history and physical examination
- Clinicians should evaluate patients with persistent LBP and signs or symptoms of radiculopathy or spinal stenosis with MRI or CT only if they are potential candidates for surgery or epidural steroid injection

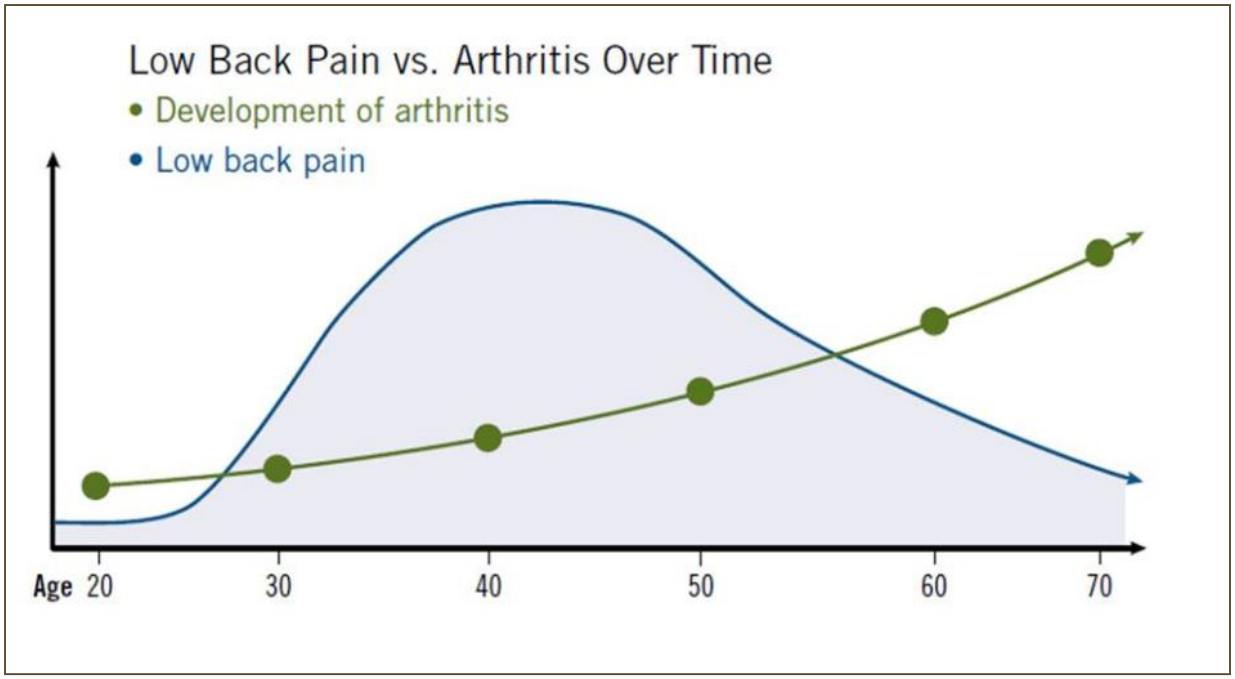
Chou (2007)

Innapropriate use of lumbar spine imaging: harmful effects

- MRI may facilitate the “medicalization” of LBP, due to its visually exquisite depiction of pathoanatomy(*)
  - Among Asymptomatic persons ≥60 y/o
    - 36% HNP
    - 21% Spinal stenosis
    - >90% degenerated or bulging disc (**)

(*) Breslau (2000) (**) Boden (1990)

Osteoarthritis vs. LBP



50 y/o female patient states: *"My physician told me, when he looked at my x-rays, that I have the spine of a 70 y/o person."*

In conclusion…

…in the early management of a low back pain episode, routine imaging and other tests usually cannot identify a precise cause, do not improve patient outcomes, and incur additional expenses.

MRI vs. depression

- A 3-year follow-up of a cohort of patients that had no LBP at baseline reported that only 2 MRI findings, canal stenosis and nerve root contact, predicted future episodes of LBP.
- A history of depression was more predictive than either of these 2 MRI findings

Carragee (2006)

Iatrogenic consequences of early MRI in acute LBP

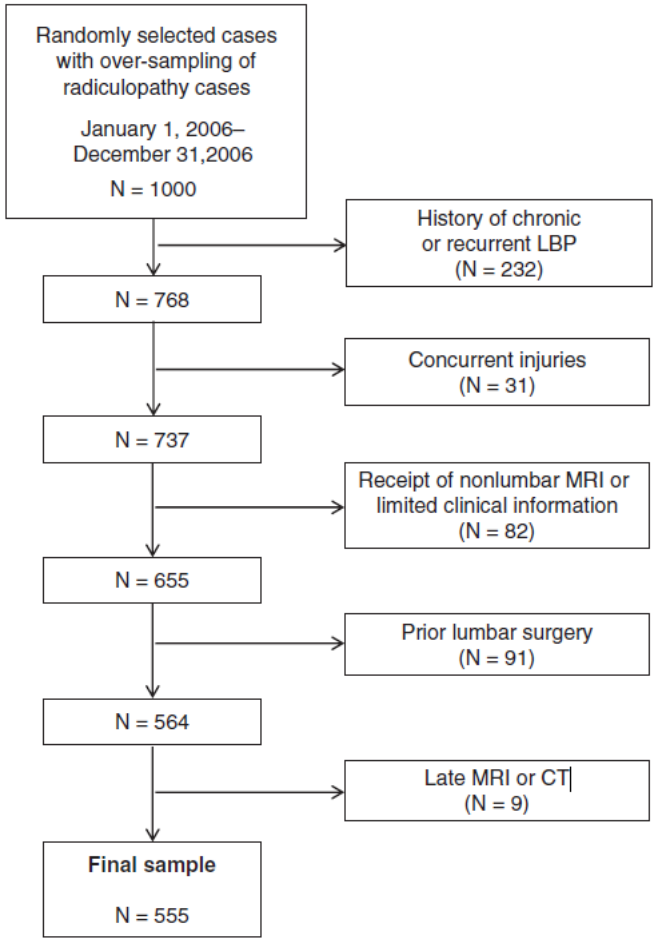
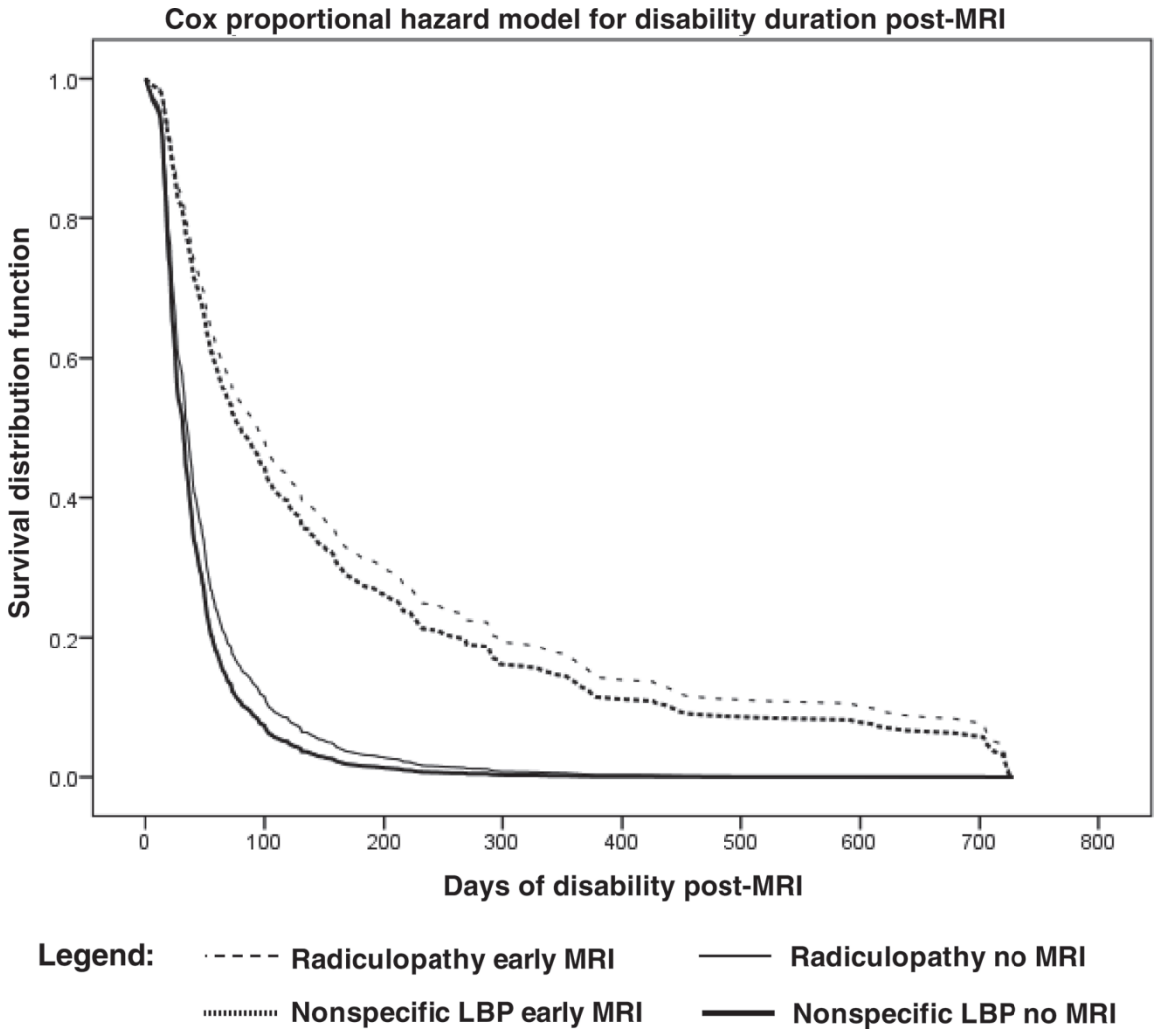


Figure 1. Flow diagram of case selection. MRI indicates magnetic resonance imaging; CT, computed tomography; LBP, low back pain.

latrogenic consequences of early MRI in acute LBP

- In the final sample (n=555), **37% of the nonspecific LBP** and **79.9% of the radiculopathy cases received early MRI**. **The early-MRI groups had similar outcomes regardless of radiculopathy status**: **much lower rates of going off disability and, on average, $12,948 to $13,816 higher medical costs than the no-MRI groups**. Even in a subgroup with relatively minimal disability impact (≤ 30 d of total lost time post-MRI), medical costs were, on average, $7643 to $8584 higher in the early-MRI groups.

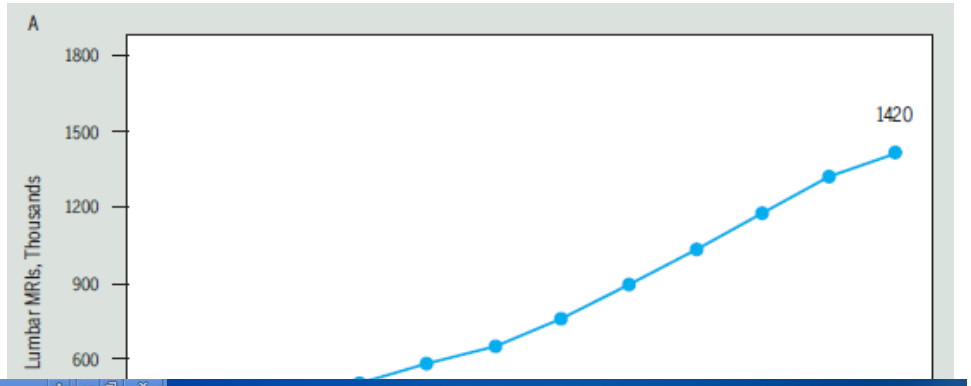
Iatrogenic consequences of early MRI in acute LBP

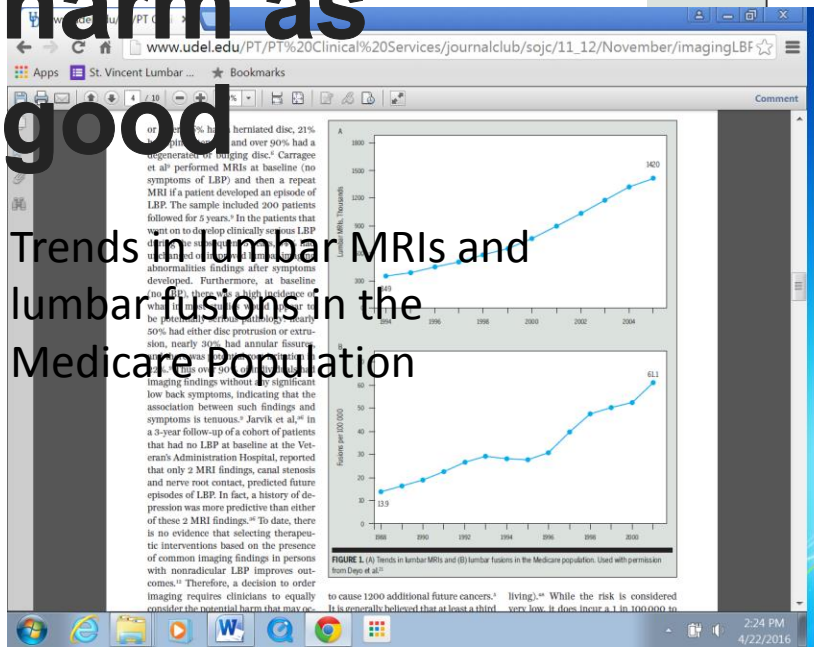


Iatrogenic consequences of early MRI in acute LBP

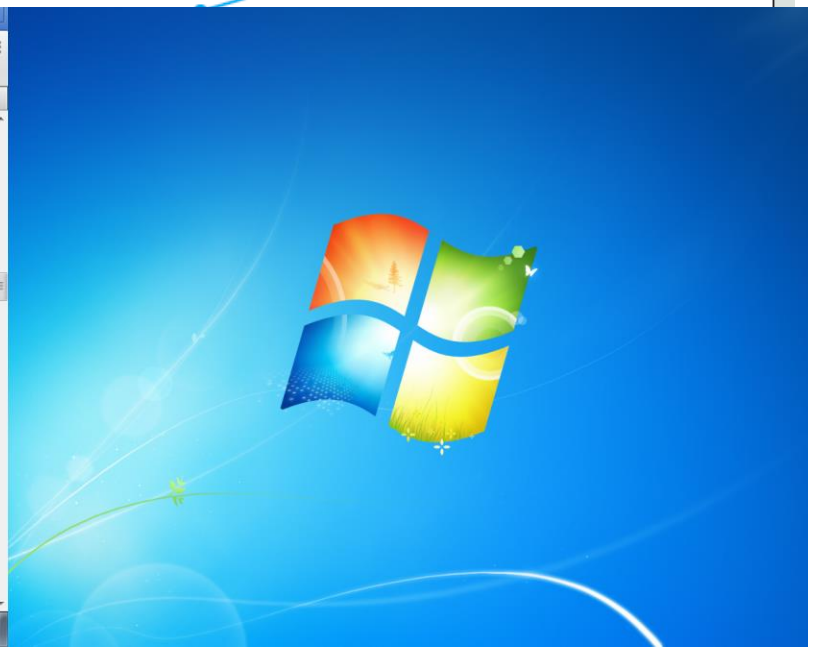
- Early MRI without indication has a strong iatrogenic effect in acute LBP, regardless of radiculopathy status. Providers and patients should be made aware that when early MRI is not indicated, it provides no benefits, and worse outcomes are likely.

Unnecessary imaging may do as much harm as good





Trends in lumbar MRIs and lumbar fusions in the Medicare Population



Deyo (2009)

Low back pain

- 60-70% of patients who suffer severe low back pain show no evidence of disc disease, arthritis, or any other symptoms that can be considered the cause of the pain.
- In clear-cut physical and neurological signs of disc herniation (in which the disc pushes out of its space and presses against nerve roots), surgery produces complete relief of back pain and related sciatic pain in only 60 % of cases.
- Patients with physical signs such as disc herniation in the lower spine are rarely helped by surgical procedures such as fusions of several vertebrae to provide structural support to the back
- Turk et al. reported that patients with several syndromes, but mostly LBP, were helped by the use of multiple techniques that converge to relieve the pain. Most patients reported that the pain was **unchanged but they were able to work, to live with their pain, and to lead more normal lives**.

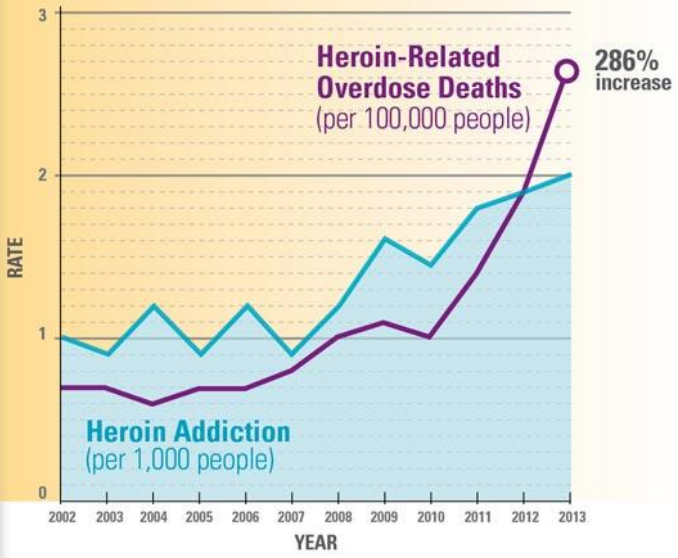
Loeser (1999)

Heroin, an epidemic problem

Heroin Use Has INCREASED Among Most Demographic Groups

	2002-2004*	2011-2013*	% CHANGE
SEX			
Male	2.4	3.6	50%
Female	0.8	1.6	100%
AGE, YEARS			
12-17	1.8	1.6	--
18-25	3.5	7.3	109%
26 or older	1.2	1.9	58%
RACE/ETHNICITY			
Non-Hispanic white	1.4	3	114%
Other	2	1.7	--
ANNUAL HOUSEHOLD INCOME			
Less than $20,000	3.4	5.5	62%
$20,000–$49,999	1.3	2.3	77%
$50,000 or more	1	1.6	60%
HEALTH INSURANCE COVERAGE			
None	4.2	6.7	60%
Medicaid	4.3	4.7	--
Private or other	0.8	1.3	63%

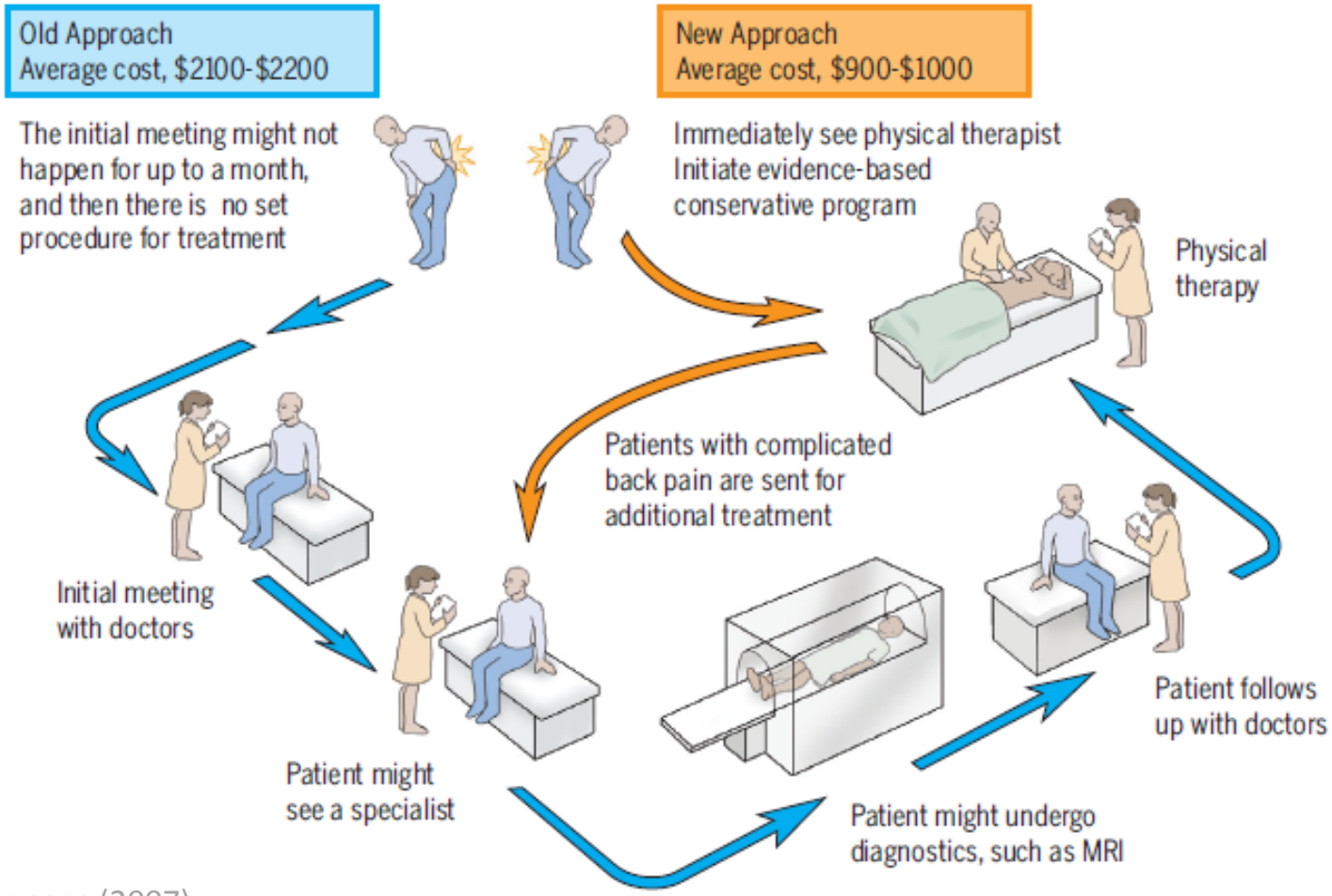
Heroin Addiction and Overdose Deaths are Climbing



SOURCES: National Survey on Drug Use and Health (NSDUH), 2002-2013.
National Vital Statistics System, 2002-2013.

Physical Therapy

Virginia Mason. Example for a pathway for LBP management



Fuhrmans (2007)

You may be wondering if PTs are qualified

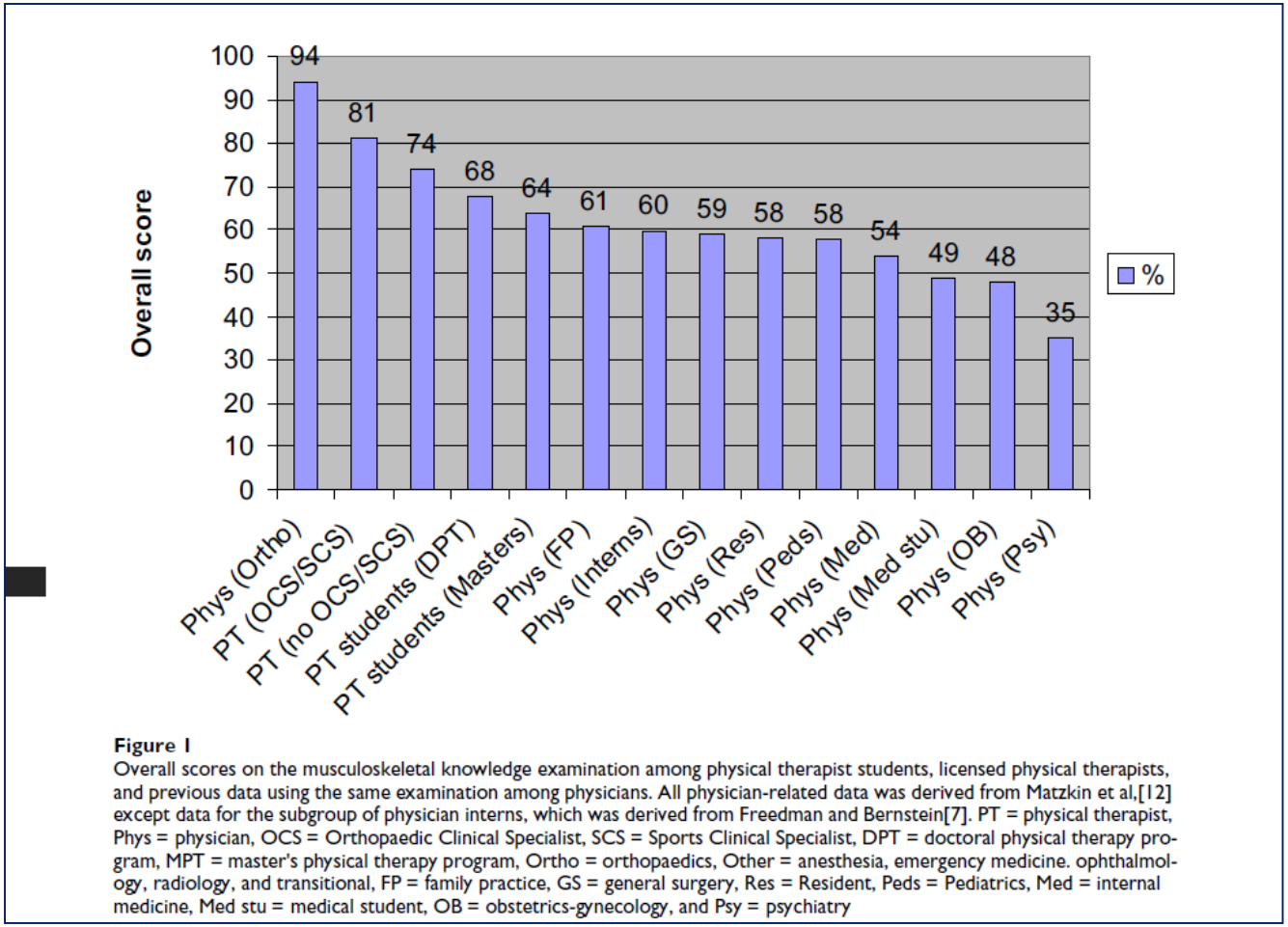
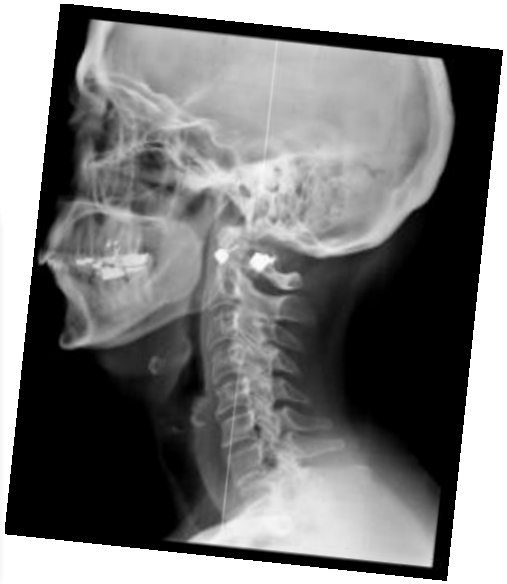
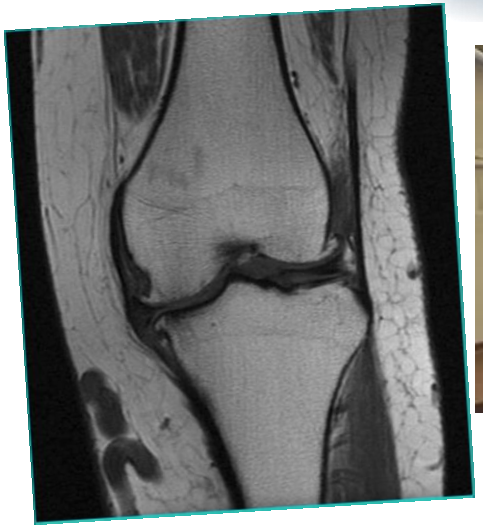


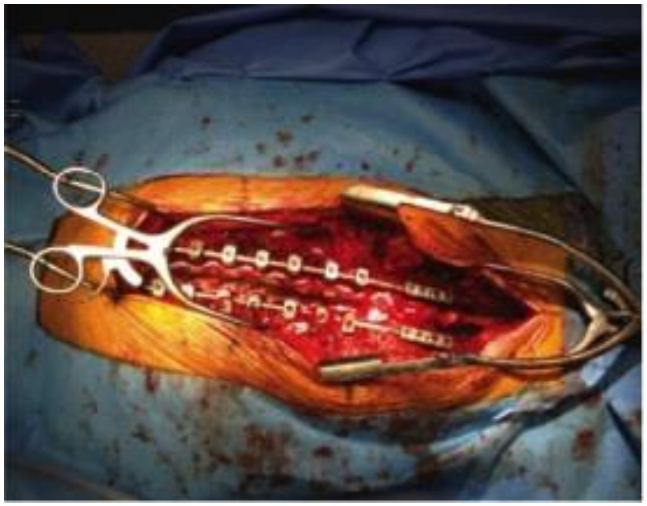
Figure 1
Overall scores on the musculoskeletal knowledge examination among physical therapist students, licensed physical therapists, and previous data using the same examination among physicians. All physician-related data was derived from Matzkin et al,[12] except data for the subgroup of physician interns, which was derived from Freedman and Bernstein[7]. PT = physical therapist, Phys = physician, OCS = Orthopaedic Clinical Specialist, SCS = Sports Clinical Specialist, DPT = doctoral physical therapy program, MPT = master's physical therapy program, Ortho = orthopaedics, Other = anesthesia, emergency medicine. ophthalmology, radiology, and transitional, FP = family practice, GS = general surgery, Res = Resident, Peds = Pediatrics, Med = internal medicine, Med stu = medical student, OB = obstetrics-gynecology, and Psy = psychiatry

Childs (2005)

What do
We don't do







References

- Turk, D. C. (2002). Clinical effectiveness and cost-effectiveness of treatments for patients with chronic pain. *The Clinical journal of pain*, *18*(6), 355-365.
- Loeser, J. D., & Melzack, R. (1999). Pain: an overview. *The Lancet*,*353*(9164), 1607-1609.
- Bingel, U., & Tracey, I. (2008). Imaging CNS modulation of pain in humans.*Physiology*, *23*(6), 371-380.
- Gifford, L. (1998). Pain, the tissues and the nervous system: a conceptual model. *Physiotherapy*, *84*(1), 27-36.
- Bedell, S. E., Graboys, T. B., Bedell, E., & Lown, B. (2004). Words that harm, words that heal. *Archives of internal medicine*, *164*(13), 1365-1368.
- Chou R, Qaseem A, Snow V, et al. Diagnosis and treatment of low back pain: a joint clinical practice guideline from the American College of Physicians and the American Pain Society. *Ann Intern Med*. 2007;147:478-491.
- Breslau J, Seidenwurm D. Socioeconomic aspects of spinal imaging: impact of radiological diagnosis on lumbar spine-related disability. Top Magn Reson Imaging. 2000;11:218-223.
- Boden SD, Davis DO, Dina TS, Patronas NJ, Wiesel SW. Abnormal magnetic-resonance scans of the lumbar spine in asymptomatic subjects. A prospective investigation. J Bone Joint Surg Am. 1990;72:403-408.
- Hong, J., & Ball, P. A. (2016). Resolution of Lumbar Disk Herniation without Surgery. *New England Journal of Medicine*, *374*(16), 1564-1564.
- Carragee E, Alamin T, Cheng I, Franklin T, van den Haak E, Hurwitz E. Are first-time episodes of serious LBP associated with new MRI findings? *Spine J*. 2006;6:624-635. http://dx.doi. org/10.1016/j.spinee.2006.03.005
- Deyo RA, Mirza SK, Turner JA, Martin BI. Overtreating chronic back pain: time to back off? *J Am Board Fam Med*. 2009;22:62-68. http:// dx.doi.org/10.3122/jabfm.2009.01.080102
- Fuhrmans V. A novel plan helps hospital wean itself off pricey tests. Wall Street Journal. 2007; 12 January:A1.
- Childs, J. D., Whitman, J. M., Sizer, P. S., Pugia, M. L., Flynn, T. W., & Delitto, A. (2005). A description of physical therapists' knowledge in managing musculoskeletal conditions. *BMC Musculoskeletal Disorders*, *6*(1), 32